Remarks

Claims 1-27, 49-53, and 59-76 are pending in the present application. Claims 77-84 have been cancelled without prejudice or disclaimer of the subject matter contained therein in order to clarify issues for appeal. Claims 34-48 have withdrawn but, as indicated in the previous office action Claims 67-76 are generic thereto. Accordingly, upon indication of allowability of Claims 67-76, Claims 34-48 should become pending in the present application. Finally, Claim 61 has been amended to correct a typographical error without narrowing the scope of the claim. Applicant respectfully requests reconsideration and allowance of the pending claims in view of the following remarks.

PTO-892 INCLUDED WITH OFFICE ACTION MAILED SEPTEMBER 27, 2005

U.S. Patent No. 5,066,904 to Bullock was cited in the rejection of most of the claims in the office action mailed September 27, 2005 and the office action mailed April 17, 2006, but has not been cited in a PTO-892. Accordingly, Applicant respectfully requests issuance of a PTO-892 citing U.S. Patent No. 5,066,904 to Bullock.

Claim Objections

Claim 61 has been amended as required by the office action mailed April 19, 2006. Thus, pursuant to 37 C.F.R. §1.116, entry of the amendment to Claim 61 is respectfully requested. In view of the amendment to Claim 61, Applicant respectfully requests withdraw of the objection to Claim 61.

The 35 USC §102(b) rejections

Claims 1-18, 20, 21, 24-27, and 49-53, 59-64, and 67-76 stand rejected pursuant to 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,066,904 to Bullock (hereafter referred to as "Bullock"). Applicant respectfully traverses these rejections because Bullock fails to teach each and every limitation of the claims.

Claims 1-18, 20, 21, 24-27

In the office action mailed April 17, 2006, it was asserted that it was not clear in Claim 1 that the secondary winding is supplying power. Applicant respectfully traverse this assertion, since Claim 1 very clearly recites a power current transformer operative to deliver power on a secondary winding, and power supply circuitry powered through said secondary winding from said power current transformer. In sharp contrast, Bullock very clearly describes a winding that provides an input signal to an amplifier. (Col. 7 lines 61-65) Applicant respectfully asserts that there is a significant difference between providing a signal to a high gain differential amplifier and delivery of power as described in Claim 1. In addition, Claim 1 very clearly describes that the power current transformer is operable to deliver power on a secondary winding, and that the power supply circuitry is powered through the secondary winding. Finally, contrary to the assertions in the office action mailed April 17, 2006, there are no limitations in Claim 1 related to a sensor to determine if the power supply is operational.

Claim 1 also describes an amplifier operative to reduce the phase shift and error ratio between the current and a scaled version of the current. In the office action mailed April 17, 2006 it has been asserted that Bullock teaches such an amplifier by citing to a general statement indicating that a coaxial design of Bullock's current divider minimizes phase error. However, the coaxial design being referred to is the configuration of parallel connected current-carrying elements having resistances R1 and R2, and a current comparator. (Col. 5 lines 18-25) Clearly a coaxial design as described by Bullock is not equivalent to an amplifier operative to reduce phase shift and error ratio. In addition, the only amplifier taught by Bullock is a high gain differential amplifier 24 that is providing an output signal to a winding 22 to induce a compensating flux in the core to reduce alternating flux in the core towards zero. (Col. 7 lines 66-68 and Col. 8 lines 1-8) Clearly, Bullocks high gain differential amplifier is not operative to reduce a phase shift and error ratio between a power line current and a scaled version of that current.

In the office action mailed September 27, 2005, Col. 7 lines 53-65, which describe Bullock's current comparator (16) were cited as equivalent to the power supply circuitry described in Claim 1. The April 17, 2006, office action, on the other hand, cites Col. 11 lines 42-47, which describes a power source providing power on conductors. Thus, two separate grounds for rejection have been provided, and the finality of the office action mailed April 17, 2006 is

premature. (see MPEP 706.07(a)) Applicant respectfully requests an opportunity to respond to the new grounds for rejection in a non-final office action. In addition, Claim 1 describes an enclosure within which the power circuitry is set, and that the power supply circuitry is powered through a secondary winding. Clearly, the power source described by Bullock is not set within an enclosure providing a window as described in Claim 1, and is not powered through a secondary winding as is further described in Claim 1.

Also, for purposes of appeal, the cited portions of Bullock fail to describe a burden set within the enclosure as described in Claim 2, and Bullock fails to specify (or even mention) the degrees of phase shift, or a dynamic range of current to a scaled version of the current as described in Claim 3. Also, Bullock does not specify (or even mention) an error ratio as described in Claim 4. Further, Claim 7 describes a shunt coupled with a secondary winding and operative to carry at least a portion of an output current of the secondary winding. Conversely, in the office action mailed April 17, 2006, it has been asserted that a shunt resistor (12) included in Bullock's sensor (8) is equivalent. Clearly, Bullock's shunt resistor is not carrying a portion of a secondary current, but rather is a conductor carrying a portion of the primary current. Bullock also does not teach a regulator coupled with a shunt resistor and operative to regulate the current as described in Claim 8, a microcontroller operative to operate the shunt in a linear or switched regulation mode as described in Claim 9, or that the shunt is a linear shunt regulator or a switching regulator as described in Claims 10 and 11, respectively. Also, Bullock does not describe a microcontroller at all, and thus cannot possible describe a switching regulator as described in Claim 12. In addition, Bullock does not teach a detector operative to detect a phase shift and ratio error as described in Claim 13, or an indicator operative to indicate said detection as described in Claim 14. Bullock also does not describe a bridge rectifier, a shunt, an energy storage device and a regulator included in power supply circuitry as described in Claim 16, a comparator as in Claim 17, or a microcontroller as in Claim 18. In addition, Bullock does not describe a second amplifier (Bullock only includes one amplifier) or a microcontroller as described in Claim 19 that is powered as described in Claim 20. Bullock also does not describe a sense core mounted in a groove of a secondary core as described in Claims 24 and 25.

Claims 49-53

Claim 49 describes an active current transformer operative to produce a scaled version of a line current that contains frequency components substantially within a first range, and power supply circuitry operable to extract power flowing within a second range of frequencies. The cited portions of Bullock, on the other hand, describe conversion of a DC signal to an AC signal using switches (Col. 18 lines 1-2), which clearly has nothing to do with extracting power within a second range of frequencies in order to supply power to an amplifier as described in Claim 49. In addition, as previously discussed, Bullock teaches delivery of a signal, not delivery of power with a power current transformer, and Applicant respectfully traverses that there is any form of equivalency between a signal and power in the context of Claim 49. Also, as previously discussed, Bullock fails to describe an amplifier operative to reduce the phase shift and ratio error between a current and a scaled version of the current.

Also, for purposes of appeal, Bullock fails to even mention any range of frequencies other than standard alternating current frequencies, and thus cannot possible describe a power supply circuitry operative to extract power in a range of 400kHz and above as described in Claim 50, or different frequency ranges as described in Claim 51. Also, Bullock does not describe a scaled version of a current in the form of digital data as described in Claim 52.

Claims 59-68

Claim 59 describes a power supply circuit having a supply rail that is regulated by the power supply circuit, and a power current transformer that includes a power coil that powers the supply rail. Applicant respectfully asserts that it is clear that the power current transformer is powering the supply rail. Bullock, on the other hand, describes a secondary coil that provides a signal as previously discussed. In addition, Claim 59 describes regulation of the supply rail in one of a switched regulation mode and a linear regulation mode to supply power to a compensation circuit from the supply rail. The cited portions of Bullock, on the other hand, describe a DC feedback path, and conversion of a DC signal to an AC signal. Since Bullock does not describe a supply rail powered with a power current transformer, Bullock cannot possibly describe regulation of such a supply rail in different modes as described in Claim 59.

In addition, for purposes of appeal, Bullock does not describe a microprocessor operable to regulate a voltage on a supply rail as described in Claim 60, or a shunt switch coupled between ground and the supply rail that is selectable to be open and closed as described in Claim 61. To the contrary, the cited portions of Bullock fail to describe a switch at all, and instead describe a shunt resistor (12). In addition, Bullock fails to describe the first and second switches coupled with the supply rail as described in Claim 62. Clearly, none of the switches in the cited portions of Bullock are selectively enabled to conduct when a voltage at the first switch is greater than a voltage of the supply rail for at least the reason that Bullock does not describe a supply rail. Also, the cited portions of Bullock fail to describe an energy storage device operable to maintain a determined voltage on the supply rail. To the contrary, the cited portion of Bullock describes an inductance of resistors R1 and R2. Clearly, the inductance of resistors R1 and R2 do not maintain a determined voltage on a supply rail. A compensation overload circuit as described in Claim 64 is also not taught by Bullock, since the cited portions of Bullock describe switching frequencies and the possibility of errors related thereto when the output voltage and current is used to calculate watts/watthours.

Claims 69-76

Claim 69 describes a power coil, an energy storage device and a shunt switch. The shunt switch is selectively operable to shunt at least a portion of the output current of the power coil to ground to maintain a determined voltage at the energy storage device. Bullock does not describe an energy storage device maintained at a determined voltage by a shunt switch. The absence of such limitations in Bullock is evidenced by the failure of the office action mailed April 17, 2006 to provide any indication of where such a shunt switch and energy storage device is described by Bullock. Since Bullock fails to describe a shunt switch and energy storage device as described in Claim 69, it follows that Bullock cannot possibly describe a compensation circuit powered by the energy storage device as described in Claim 70, and such is not discussed in the office action mailed April 17, 2006. In addition, Bullock fails to describe switch mode regulation of the energy storage device with a microprocessor and linear regulation of the energy storage device with a regulator as described in Claim 72. Also, Bullock fails to describe a one way switch as described in Claim 73, a switched capacitor circuit as described in Claim 74, or the shunt switch

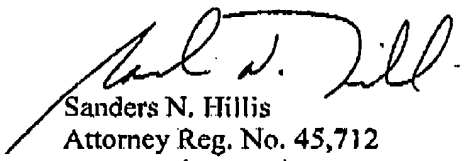
and energy storage device of Claim 75, as evidenced by the fact that the limitations included in these claims are not mentioned in the office action mailed April 17, 2006.

For at least the foregoing reasons Claims 1, 49, 59, and 69, and the claims dependent therefrom, are patentable over Bullock. Thus, Applicant respectfully requests withdrawal of the 35 U.S.C. § 102(b) rejection of Claims 1-27, 49-53, and 59-76.

Conclusion

The application is believed to now be in condition for allowance, which is respectfully requested. Should the Examiner deem a telephone conference to be beneficial in expediting examination and/or allowance of this application, the Examiner is invited to call the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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